REMARKS

This paper is being provided in response to the January 28, 2004 Final Office Action for

the above-referenced application. In this response, Applicant has added Claims 40-56 and

amended Claims 1, 13, 25, 34 and 52 in order to clarify that which Applicant deems to be the

claimed invention. Applicant respectfully submits that the amendments to the claims are all

supported by the originally filed application.

In response to the Election/Restriction, Applicants have noted claims 53-56 as being

withdrawn herein.

The rejection of Claims 1-5, 7-16, 19-28, 31-37, 40-47, and 52 under 35 U.S.C. § 102(e)

as being anticipated by U.S. Patent No. 6,446,174 to West et al. (hereinafter referred to as

"West") is hereby traversed and reconsideration thereof is respectfully requested in view of teh

amendments to the claims herein.

Applicant's Claim 1, as amended herein, recites a method of dynamically creating a

communication path between first and second storage devices. A connection is created to a

source volume on the first storage device and it is indicated that the source volume is not ready

to transmit data on the communication path. It is determined which of the source volume and a

destination volume contains an initial set of data. After successfully creating the connection to

the source volume, a connection to the destination volume on the second storage device is

created and it is initially indicated that portions of one of: the destination volume and the source

volume do not contain valid copies of data in accordance with which of the destination and the

source volumes contains the initial set of data. After successfully creating the connections to the

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source and destination volumes, it is indicated that the source volume is ready to transmit data on the communication path. The initial set of data is transferred from one of the source volume and the destination volume to the other one the source volume and the destination volume while transferring data written after the initial data from the source volume to the destination volume. Claims 2-5, 7-11, 40, and 41 depend from Claim 1.

Applicant's Claim 13, as amended herein, recites a method of dynamically creating a communication path between first and second storage devices. A connection is created to a destination volume on the first storage device. It is determined which of the destination volume and a source volume contains an initial set of data. After successfully creating the connection to the destination volume, a connection is created to the source volume on the second storage device. It is indicated that the source volume is not ready to transmit data on the communication path and initially it is indicated that portions of one of: the destination volume and the source volume do not contain valid copies of data in accordance with which of the destination and the source volumes contains the initial set of data. After successfully creating the connections to the source and destination volumes, it is indicated that the source volume is ready to transmit data on the communication path. The initial set of data is transferred from one of the source volume and the destination volume to the other one the source volume and the destination volume while transferring data written after the initial data from the source volume to the destination volume. Claims 14-16, 19-24, 42, and 43 depend from Claim 13.

Applicant's Claim 25, as amended herein, recites a computer program product that creates a communication path between first and second storage devices, including: executable code that creates a connection to a source volume on the first storage device and indicates that

the source volume is not ready to transmit data on the communication path; executable code that determines which of the source volume and a destination volume contains an initial set of data, executable code that creates a connection to the destination volume on the second storage device and initially indicates that portions of one of: the destination volume and the source volume do not contain valid copies of data after successfully creating the connection to the source volume in accordance with which of the destination and the source volumes contains the initial set of data, executable code that indicates that the source volume is ready to transmit data on the communication path after successfully creating the connections to the source and destination volumes, and executable code that transfers the initial set of data from one of the source volume and the destination volume to the other one the source volume and the destination volume while transferring data written after the initial data from the source volume to the destination volume. Claims 26-28, 31-33, 44, and 45 depend from Claim 25.

Applicant's Claim 34, as amended herein, recites a computer program product that dynamically creates a communication path between first and second storage devices, including: executable code that creates a connection to a destination volume on the first storage device; executable code that determines which of the destination volume and a source volume contains an initial set of data; executable code that creates a connection to the source volume on the second storage device and indicates that the source volume is not ready to transmit data on the communication path and initially indicates that portions of one of: the destination volume and the source volume do not contain valid copies of data after successfully creating the connection to the destination volume in accordance with which of the destination and the source volumes contains the initial set of data, executable code that indicates that the source volume is ready to transmit data on the communication path after successfully creating the connections to the source

and destination volumes, and executable code that transfers the initial set of data from one of the source volume and the destination volume to the other one the source volume and the destination volume while transferring data written after the initial data from the source volume to the destination volume. Claims 35-37, 46, and 47 depend from Claim 34.

Claim 52 recites a system that includes a host computer and a local storage device connected to a remote storage device. The host includes executable code that sends an I/O request to said local storage device and executable code that sends a command to dynamically create a communication path between said local storage device and said remote storage device. The system further includes executable code that creates a connection to a source volume on the local storage device and indicates that a source volume on the local storage device is not ready to transmit data on the communication path executable code that determines which of said source volume and a destination volume on the remote storage device contains an initial set of data executable code that creates a connection to a destination volume on the second storage device and initially indicates that portions of one of: the destination volume and the source volume do not contain valid copies of data after successfully creating the connection to the source volume in accordance with which of said destination and said source volumes contains said initial set of data, executable code that indicates that the source volume is ready to transmit data on the communication path after successfully creating the connections to the source and destination volumes. and executable code that transfers the initial set of data from one of the source volume and the destination volume to the other one the source volume and the destination volume while transferring data written after the initial data from the source volume to the destination volume.

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West discloses a storage control system and method for storing and retrieving data to and from a tape backup system that is located remotely from a primary host system. The primary system is coupled to a remote storage system for remote copy applications. The tape backup system is coupled to the remote storage system and operated at the remote site. Conducting control signals through the primary storage controller to the remote storage controller enables control over the tape backup system from the local or primary site. Data can be backed up to the tape system from the remote storage site which enables the local host to perform applications during the backup window. Data can also be restored from the tape system to the remote storage system and transferred back to the primary system via the communications link. The system operates in either backup mode (col. 5, line 41through col. 11, line 67) or in restore mode (col. 12, line 1 through col. 16, line 48).

Applicants respectfully submit West neither discloses nor suggests a recited feature of Claim 1 of transferring an initial set of data from one of the source volume and the destination volume to the other one the source volume and the destination volume while transferring data written after the initial data from the source volume to the destination volume. Instead, West discloses running either in backup mode (transferring all data from the source to the destination) or in restore mode (transferring all data from the destination to the source).

In contrast, the invention recited in Claim 1 transfers the initial data from *either* the source or destination to the other one of the source and destination while transferring data written after the initial data from the source to the destination. Thus, Applicants' claim 1 contemplates transferring the initial data from the destination to the source while, at the same time, transferring subsequent data (data created after the initial data) from the source to the destination. This

arrangement is illustrated in Figure 3 and the corresponding text of the application. As set forth

in the application, the advantage of such an arrangement is that data can be restored to the R1

(source) device while, at the same time, data written to the R1 device by a host may be stored on

the R2 (destination) device. In contrast, the device described in West provides no such

advantage because, with the West system, it appears to be necessary to first restore the

destination device to the source device and, following that, then store data from the source

device to the destination device.

Applicants further respectfully submit that the other independent claims 13, 25, 34, and

52 contain similar features and are thus allowable for the same reasons as claim 1. Accordingly,

Applicants respectfully request that this rejection be reconsidered and withdrawn.

The rejection of Claims 5, 6, 17, 18, 29, 30, 38, 39, and 48-51 under 35 U.S.C. § 103(a)

as being unpatentable over West and U.S. patent No. 6,457,109 to Milillo et al. (hereinafter

"Milillo") is hereby traversed and reconsideration thereof is respectfully requested in view of

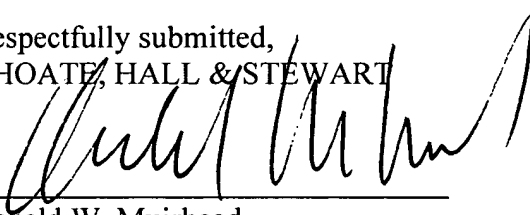amendments to the claims contained herein.

Each of the claims set forth in the rejection above depends from one of the independent

claims discussed above in connection with the rejection under 35 U.S.C. § 102(e) based on West.

Milillo discloses a method and apparatus in a data processing system for copying data. A request

is received to copy data from a first storage system to second storage system, wherein the request

identifies a source volume on the first storage system and a target volume on the second storage

system and wherein data is located on a first source volume in the first storage system. Data is

transferred to a second source volume in the first storage system. A pair is automatically

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established between the second source volume and the target volume. The data for the request is copied from the second source volume to the target volume after the pair has been automatically established. The pair is terminated after the data has been copied to the target volume.

Applicants respectfully submit that the deficiencies of West with respect to the independent claims, discussed above, are not overcome by the addition of the Milillo reference. More specifically, neither West, nor Milillo, nor any combination thereof disclose or suggest the recited feature of transferring an initial set of data from one of the source volume and the destination volume to the other one the source volume and the destination volume while transferring data written after the initial data from the source volume to the destination volume. Accordingly, Applicants respectfully request that this rejection be reconsidered and withdrawn.

Based on the above, Applicant respectfully requests that the Examiner reconsider and withdraw all outstanding rejections and objections. Favorable consideration and allowance are earnestly solicited. Should there be any questions after reviewing this paper, the Examiner is invited to contact the undersigned at 617-248-4038.

Respectfully submitted,
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Date

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